

國立清華大學數學系學術演講

NTHU MATH Colloquium

- 講題 An Introduction to Random Fields:
Connections to SPDEs and Their Geometric Properties
- 講者 Prof. Yimin Xiao (Michigan State University)
- 時間 2023.05.22 (Mon.) 16:00 – 17:00
- 地點 第三綜合大樓**2樓 Room 201** (請同學配戴口罩)
- 茶會 15:30, Room 707

Abstract

We present an overview on random fields and introduce their important statistical characteristics such as spectral representations, anisotropy, self-similarity and other scaling properties. Important examples of random fields include Gaussian random fields with stationary increments, solutions to systems of stochastic partial differential equations (SPDEs), and random matrices with random field entries.

The sample functions of random fields may be rough (e.g., nowhere differentiable) or continuously differentiable. Tools from fractal geometry or differential topology are needed to study their geometric and probabilistic properties. We will provide some examples of these results for Gaussian random fields and the solutions to SPDEs.